WHAT IS CLAIMED IS:

1. An optical waveguide device, comprising:

a substrate;

at least one optical waveguide disposed in said substrate;

a first conductive thin film layer placed in the vicinity of or on the top of said optical waveguide in said substrate and containing an oxide; and

a second conductive thin film layer laminated on said first thin film layer and exhibiting acidic or neutral characteristics in its oxidized condition.

2. An optical waveguide device as claimed in claim 1, wherein:

said first thin film layer contains an indium oxide (ITO).

3. An optical waveguide device as claimed in claim 1, wherein:

said second thin film layer contains chromium.

4. An optical waveguide device as claimed in claim 1, wherein:

a protective film is formed on at least one exposed surface of each of said first thin film layer and said second thin film layer.

5. An optical waveguide device as claimed in claim 1, wherein:

a third conductive thin film layer exhibiting neutral characteristics is formed on the surface of said second thin film layer.

6. An optical waveguide device as claimed in claim 5, wherein:

said third thin film layer contains gold.

7. An optical waveguide device as claimed in claim 1, wherein:

a protective film is formed over the whole exposed surface of an electrode composed of said first thin film layer, said second thin film layer, and said third thin film layer.

8. An optical waveguide device as claimed in claim 1, wherein:

said substrate is fabricated from a lithium niobate ($LiNbO_3$) substrate;

said optical waveguide is disposed on said lithium niobate substrate in such a manner that two Mach-Zehnder type directional couplers are formed, and further a phase shifter is formed in between these directional couplers; and

said phase shifter is provided with an electrode of a structure containing said first thin film layer and said second thin film layer, whereby an electric field produced in response to a voltage applied to said electrode is given to said optical waveguide to function as a variable optical attenuator.

9. An optical waveguide device as claimed in claim 1, wherein:

said second thin film layer is provided with a third conductive thin film layer laminated thereon and exhibiting neutral characteristics in its oxidized condition.

10. An optical waveguide device as claimed in claim 1, wherein:

said first thin film layer is a thin film layer of indium oxide to which tin has been added (ITO); and

said second thin film layer is a chromium thin film layer.

11. An optical waveguide device as claimed in claim 9, wherein:

said third thin film layer is a gold thin film layer.

12. A process for the production of an optical waveguide device, comprising the steps of:

forming at least one optical waveguide in an LN (lithium niobate) substrate;

forming an ITO film on said optical waveguide and the surface of said LN substrate;

forming a photoresist on said ITO film to conduct a patterning operation;

removing unnecessary portions of said ITO film by means of etching with use of said photoresist as a mask to form the ITO pattern;

removing the photoresist on said ITO pattern;

forming a chromium thin film having a thinner film thickness than that of said ITO film on the surface of said ITO pattern and an exposed surface of said substrate;

applying a photoresist on said chromium thin film;

removing unnecessary portions of said chromium thin film by means of etching; and

removing the photoresist remained on said chromium thin film after said etching.